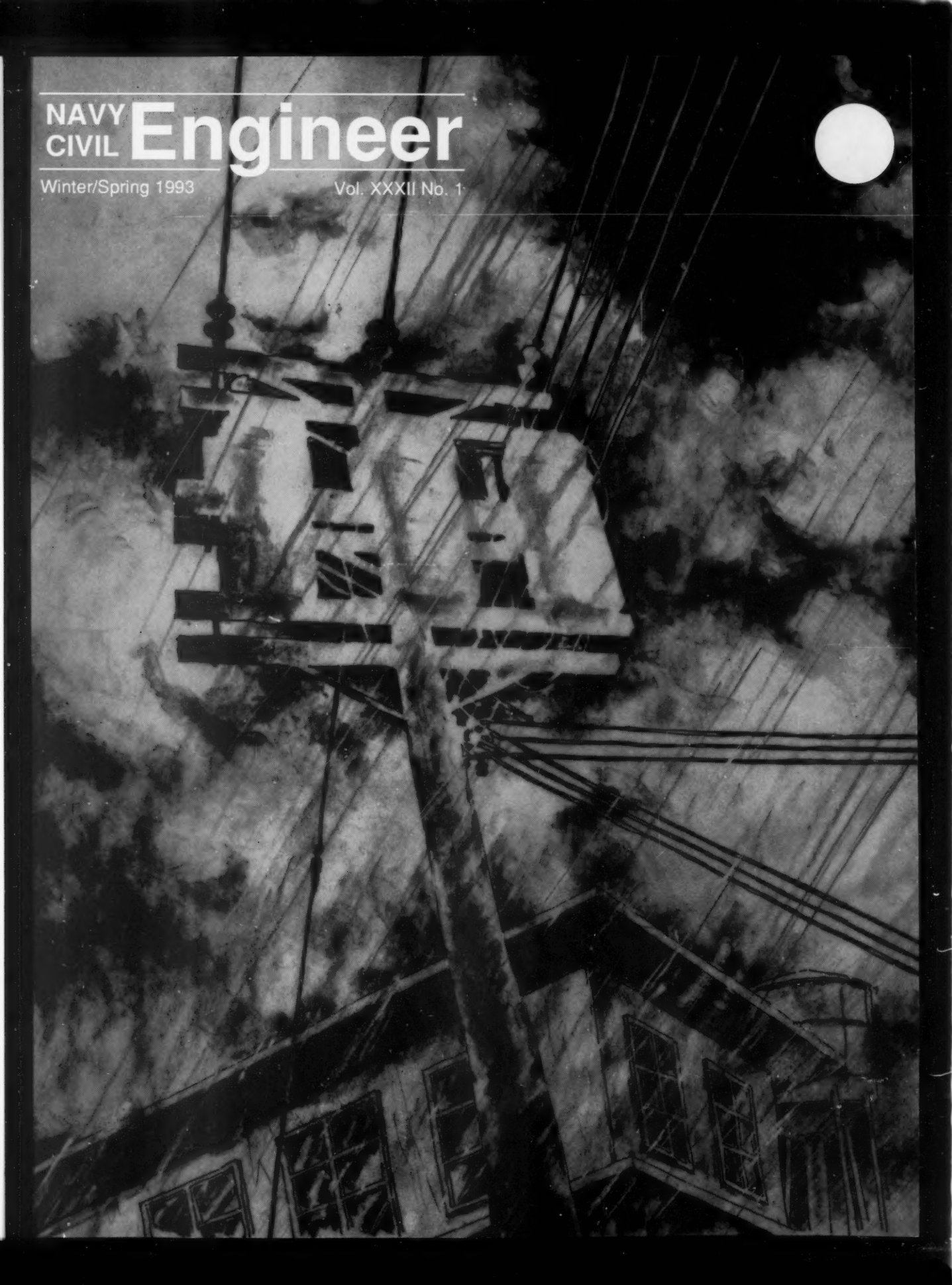
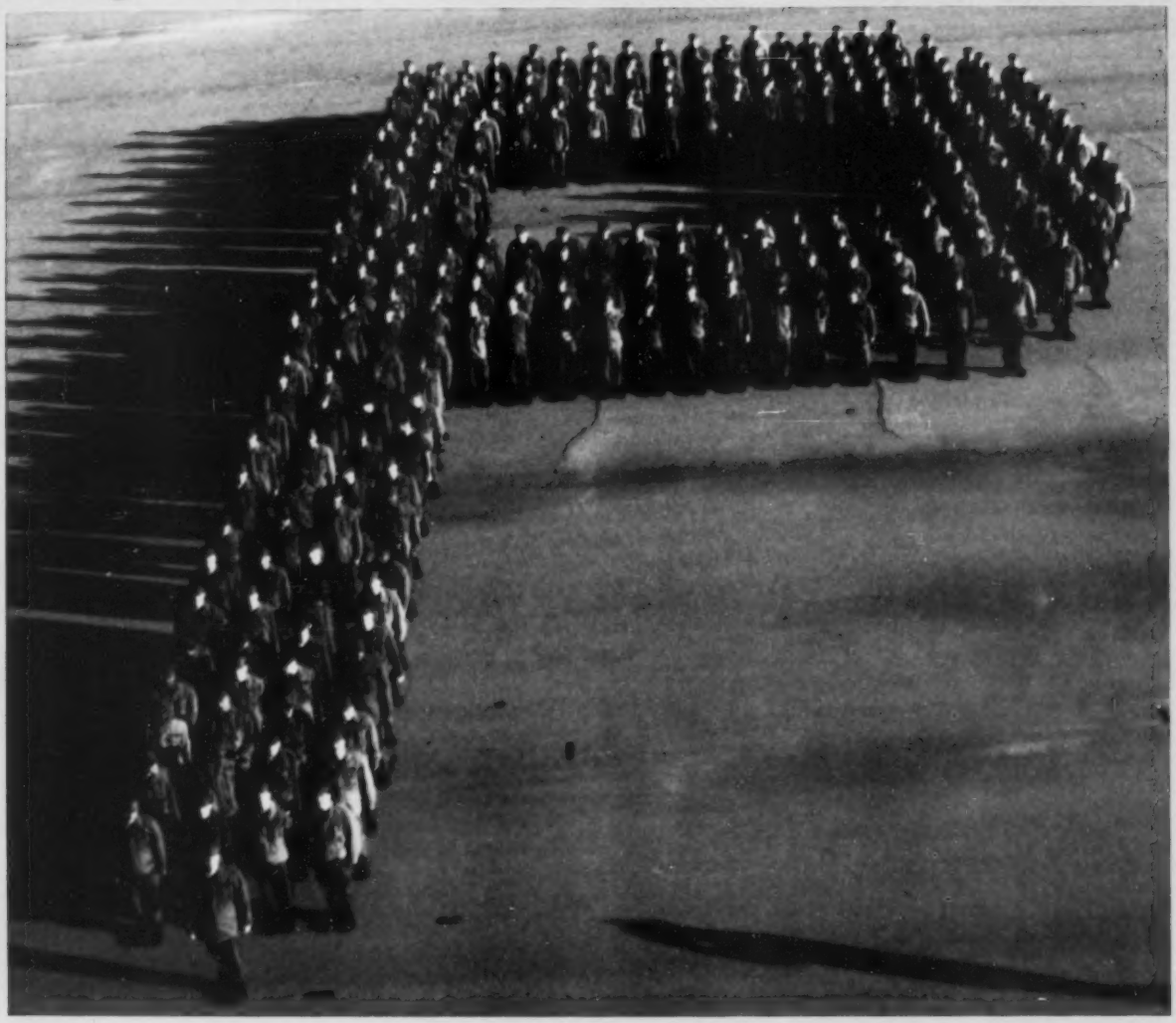

NAVY
CIVIL Engineer
Winter/Spring 1993
Vol. XXXII No. 1

Congratulations Kangroos!



Members of Naval Mobile Construction Battalion 133 form a "P" for the Peltier Award. The Society of American Military Engineers recognized the "Kangroos" as the best Seabee battalion for 1992. (Photo by PH1 E.S. Furjes)

Congratulations to Naval Mobile Construction Battalion 133, the recipient of the FY 92 Peltier Award, which is presented annually by The Society of American Military Engineers to recognize outstanding military and engineering service by a naval mobile construction battalion in the active Naval Construction Force.

NMCB 133 demonstrated outstanding performance during FY 92 in command leadership, readiness, construction, safety, disaster recovery, retention, human resources programs, and personal awards and recognition. NMCB 133's regular deployment to Guam was dramatically altered with the accelerated closing of Subic Bay Naval Station in the Philippines. The focus of the Guam deployment was to provide Philippine-based commands with vitally needed facilities to support their rollback to Guam. In the midst of this, Typhoon Omar hit Guam, devastating the island. NMCB 133 worked long hours under adverse conditions providing humanitarian assistance by repairing schools, providing shelter, and repairing water distribution and power systems.

Cover art by Bill Brack, Naval Facilities Engineering Command Headquarters, Alexandria, Va.

NAVY CIVIL Engineer

Winter/Spring 1993 Vol. XXXII No. 1

Jack E. Buffington
Rear Admiral, CEC, USN
Commander,
Naval Facilities Engineering Command
and
Chief of Civil Engineers

Robert M. Gallen
Rear Admiral, CEC, USN
Vice Commander,
Naval Facilities Engineering Command
and
Deputy Chief of Civil Engineers

Elaine L. McNeil
Public Affairs Officer,
Naval Facilities Engineering Command

Karen Fedele
Editor,
Navy Civil Engineer Magazine
and
Assistant Public Affairs Officer,
Naval Facilities Engineering Command

Editorial Offices
The *Navy Civil Engineer* is published quarterly by the Naval Facilities Engineering Command, 200 Stovall Street, Alexandria, Va. 22332-2300. Telephone: (703) 325-0310, DSN 221-0310. Fax: (703) 325-4408.

Subscriptions
Subscriptions to the *Navy Civil Engineer* are available from New Orders, Superintendent of Documents, P.O. Box 371954, Pittsburgh, Pa. 15250-7954. Price: $5.50 per year for domestic and $6.88 for foreign.

Address Changes
Send address changes to editorial and business offices: Naval Facilities Engineering Command, Attn: Editor, *Navy Civil Engineer* Magazine (Code OODA), 200 Stovall Street, Alexandria, Va. 22332-2300. Telephone: (703) 325-0310, DSN 221-0310.

Authorization
Issuance of the *Navy Civil Engineer* is approved in accordance with the Department of the Navy Publications and Printing Regulations, NAVSO P-35. It does not alter, amend or supersede official regulations, orders, or directives. Printing costs are charged to appropriated funds for maintenance and operations of NAVFAC.

The *Navy Civil Engineer* is intended for the information of regular and reserve personnel of the Civil Engineer Corps, United States Navy, and key civilian employees of NAVFAC, subordinate commands, and other mission-oriented activities.

Features

3 **Seabees Rebuild After Hurricane Andrew**
By LCDR George W. Powers Jr., CEC, USN and LT Robert G. Fahey, CEC, USN

6 **Schools Open On Time Thanks to Seabee Repairs to Hurricane-Damaged Roofs**
By LT Michael R. Keller, CEC, USN

9 **AMPHIBs: They Made a Difference**
By LCDR Robert D. Rotz, CEC, USN

11 **Seabees Help Communities in the Bahamas Recover from Andrew**
By LT Stephen T. Rookus, CEC, USN

13 **Acquisition Can Be Fun!**
By CAPT W. Wayne Tomiak, CEC, USN

16 ***SEACON* Supports JLOTS Operations in Honduras**
By LT David M. Boone, CEC, USN, P.E.

21 **Newport Design/Build: A Winner for the Government and the Contractor**
By James M. Briggs, PE and LT Alan M. Wironen, CEC, USN, PE

Departments

2 **Speaking from Topside**

25 **57 Complete Basic Training at CECOS**

28 **Advice of Counsel**

30 **Total Quality Leadership Update**

31 **News Worth Reviewing**

Speaking from Topside

For America's military forces, it is apparent that we can expect further downsizing and streamlining. Obsolete units and missions will be scrapped, and inefficiencies will be eliminated, as they should be. Some military organizations will resist these changes; some will helplessly watch; others—the Seabees included—will march well ahead of the tempo, and make changes from within that will exceed anything that could be imposed by external forces. The ongoing restructuring of the Seabees is a prime example.

In 1992, active duty and naval reserve Seabees were integrated into two Naval Construction Brigades (NCBs)—the Second NCB, under Commander in Chief, U.S. Atlantic Fleet, and the Third NCB, assigned to the Commander in Chief of the Pacific Fleet. Brigade staffs consist of active duty and selected reserve personnel working side-by-side to provide leadership and direction for the new organization. Regiments, battalions and other types of units, whether active duty or reserve, now report to the two brigades in carrying out their common mission of construction support for Navy and Marine Corps forces.

Some units have been phased out to make way for new units and missions, such as the two construction battalion maintenance units that we expect to commission soon. Personnel from decommissioned units have been transferred to new units or to existing units to fill vacancies there. The Seabees have undergone no reduction in force, and we do not anticipate personnel reductions as we provide increasing amounts of contributory support to the fleet.

Get used to that phrase: "contributory support." Our primary focus for the foreseeable future will be to provide value-added construction support at U.S. military installations around the world. As the overall defense budget shrinks, commanders who must conserve funds appreciate the money-saving labors of the Seabees. In one short year, we have increased, by several fold, the reserves direct construction support to the fleets that they themselves could not afford. At the same time, the Seabees maintain readiness for quick response, as we showed most recently for Hurricane Andrew and Operation Restore Hope in Somalia.

We are seeking other innovative ways to respond to our changing Navy. We are experimenting with a readiness concept, whereby some units would be fully prepared for mobilization to a combat zone, while others would be ready to provide construction support in a non-hostile environment. We are at the forefront of a "flexible drill" test for reserve Seabees, allowing them to go to a project site for three or four weeks at a time, and breaking out of the minimally productive cycle of drill weekends spent at the reserve center.

Rather than running from the changes our naval forces now face, the Seabees are running ahead of them. They will continue to offer pure construction muscle to U.S. and allied commanders around the world.

RADM Melvin H. Chiogioji, CEC, USNR

MELVIN H. CHIOGIOJI
Rear Admiral, CEC, USNR
Commander, Second Naval Construction Brigade

Replacing half of the roof on the Robert Morgan Vocational Technical Institute after Hurricane Andrew presented a challenge for Seabees.

Seabees Rebuild After Hurricane Andrew

By LCDR George W. Powers Jr., CEC, USN
and
LT Robert G. Fahey, CEC, USN

Photos by PH1 Thom Lindgren and JO1 Mark Everts

The sign at the 22nd Naval Construction Regiment (Forward) headquarters tent explained the Seabees' mission and their role in South Florida following Hurricane Andrew: "We build. We rebuild." And rebuild they did.

Hurricane Andrew struck Dade County, Fla., in the early morning hours of Monday, Aug. 24, 1992. Because most residents in low-lying areas and trailers evacuated before the hurricane struck, there were few deaths and serious injuries. More than half a million residents in Dade, Broward and Monroe counties lost power for several days, and nearly 100,000 people were left homeless in Dade County.

The 160 mile-per-hour winds left roads blocked with power lines, fallen trees, signs and parts of houses. Water supplies were contaminated. Telephones were out. Everything for 30 miles—hospitals, grocery stores and gas stations—was closed. Police and fire operations were severely ham-

---

LCDR George W. Powers Jr. is the Atlantic Command/Southern Command operations officer at Commander, Second Naval Construction Brigade in Norfolk, Va. LT Robert G. Fahey is the European Command project officer at COMSECONDNCB.

Seabees helped crews from Florida Power and Light restore power after Hurricane Andrew hit south Florida.

pered. Looting began.

When local and state officials realized the enormity of the disaster, they requested federal assistance and, under the Disaster Relief and Emergency Assistance Act, Joint Task Force Andrew was created.

The Federal Emergency Management Agency assessed the damage and set priorities for disaster relief efforts by military units. Initially, military troops were assigned to restore order and provide water, food and medical care.

Under the federal response plan, the Army Corps of Engineers provided public works and engineering services. Tasked with a large requirement for debris removal and emergency roof repairs, the Corps requested support from the Naval Construction Force. As a result, elements of three naval mobile construction battalions, an amphibious construction battalion and four construction battalion units were dispatched to South Florida. A forward element of the 22nd Naval Construction Regiment provided operational control. A total of 750 Seabees participated in the operation.

As the Seabees began mobilizing, six Navy ships sailed to the Port of Miami. Captain Richard Williams, USN, Commander Amphibious Squadron Six, was assigned as Commander, Task Force 28 to develop taskings for the naval forces.

Rebuild schools

Dade County requested military assistance to rebuild schools and several county government buildings. CAPT Williams and Lieutenant Commander George W. (Bill) Powers Jr., CEC, USN, of Commander, Second Naval Construction Brigade, identified school restoration as a project the Seabee-sailor team could accomplish. On Sept. 1, CAPT Williams and LCDR Powers presented a plan to Dade County officials, and JTF Andrew tasked CTF 28 with making schools habitable by Sept. 14.

Captain Pete Vadas, CEC, USN (Ret), maintenance chief for the Dade County schools, had made a preliminary assessment of the 278 schools in the county. Using a military triage system, 224 schools were classified as requiring only minor repair. Forty-four schools required extensive repairs, and 10 had such extensive damage that short-term repairs were not possible.

Meanwhile, Seabees were arriving to begin work. Two camps were formed: the main camp at a water pumping station on the edge of the Everglades in Florida City and one eight miles north in a churchyard.

At the height of the operation, 220 pieces of equipment were assembled along the roadway leading into the main camp. NMCB One brought civil engineering support equipment in two separate convoys from Gulfport, Miss. Seven hundred tons of NMCB Four

Seabee Units Which Supported Hurricane Andrew Recovery Operations

NMCB One	Gulfport, Miss.
NMCB Four	Port Hueneme, Calif.
NMCB 14	Jacksonville, Fla.
ACB Two	Norfolk, Va.
CBU 410	Jacksonville, Fla.
CBU 412	Charleston, S.C.
CBU 419	Orlando, Fla.
CBU 420	Mayport, Fla.

NMCB:	Naval Mobile Construction Battalion
ACB:	Amphibious Construction Battalion
CBU:	Construction Battalion Unit

equipment was airlifted from Puerto Rico. One hundred pieces of amphibious Seabee equipment arrived aboard USS *Ponce*.

Commander James T. Corbett, CEC, USN, then-commanding officer of NMCB Four, served as commander of 22nd NCR (Forward).

"The schools were ideally suited for the Seabee and sailor team," CDR Corbett said. "The Seabees cleared the way to the schools with front end loaders and dump trucks. The sailors removed soaked and mildewed ceiling tiles and carpets, mopped standing water and cleaned, disinfected and dried classrooms. At the same time the Seabees repaired roofs, replaced fences and tested electrical systems."

Because most street signs and many landmarks were destroyed, Seabees found the first days in Dade County slow and difficult. Traffic was snarled because of road debris and lack of stop signs or lights. Work was delayed because dump truck drivers had to contend with heavy traffic to designated dump sites. Crews, headed for their assigned work sites, frequently lost their bearings in suburban cul-de-sacs. The sailors' daily commute in school buses from the Port of Miami took at least one hour each way.

The effort required constant coordination to assign people, equipment and supplies where needed. As soon as one school was finished, focus shifted to other schools. Several schools thought too damaged to open on time were ready on Sept. 14. Other schools presented eleventh-hour challenges such as emergency roof repairs.

From the beginning, school principals and those living near schools were aware of the work of the 1,200-person Navy team. As the announced school opening date approached, the work of Seabees and sailors drew more attention. On the first day of school, Seabees and sailors were cheered, presented with plaques, and showered with praise for their work.

A Seabee begins roof repair work. From atop the three-story building, Seabees could view miles of devastation.

"Our school is such an important center of the community," said Dr. Fred Rodgers, principal of the 3,000-student Miami Southridge High School. "Until we could get it opened, our community couldn't rebuild. You have given us back our school," he told the Seabees. "You are tremendous."

The Seabees' earned praise from then-President George Bush who sent a letter to the Secretary of the Navy. "The Superintendent of Dade County Schools was full of praise for the skill, dedication and positive cooperation of the Navy's Seabees whose repair assistance made the opening possible," the President wrote. "Please extend to the Seabee units involved my personal appreciation for their outstanding contributions and this further demonstration of the 'can do' spirit."

In 13 days, the Seabee and sailor team accomplished 13,500 workdays at a value of more than $2,200,000. More importantly, the community began to return to normal.

While most effort was focused on the schools, Seabees continued to remove street debris—27,000 cubic yards in all and assisted in street and traffic light repair and power restoration until the end of September. Seabees from the CBUs repaired damage to facilities at Naval Security Group Activity Homestead and a Coast Guard communications station. ❑

Contributors to the article

Lieutenant John M. Ellwood, CEC, USN, NMCB Four
Chief Equipment Operator Johnson, NMCB One
Lieutenant Robert Weber, CHC, USNR, 22nd NCR (Forward)
Lieutenant Laurence J. Readal, CEC, USN, NMCB Four
Lieutenant Greg Darden, CEC, USNR, NMCB 14
Lieutenant Commander Roberta McCorkle, USNR, COMSECONDNCB
Lieutenant (Sel.) Gary N. Underwood, CEC, USN, CBU 420
Lieutenant Commander Robert D. Rotz, CEC, USN, ACB Two

Schools Open On Time Thanks to Seabee Repairs to Hurricane-Damaged Roofs

By LT Michael R. Keller, CEC, USN

A large portion of the Seabees' efforts to repair Dade County (Fla.) schools after Hurricane Andrew was spent on roofs. Damage to roofs throughout the area was great. Even school buildings constructed of concrete blocks and having few windows had their interiors severely damaged because their roof systems failed.

Roof damage was primarily caused by the 160-mph sustained winds that accompanied Andrew. The winds were strong enough to separate portions of membranes from the roof deck or insulation system. Total damage to roofing systems varied with the type of insulation system. Roofs with perlite or polyisocyanurate insulation systems tended to have only the membrane portions of the insulation system torn off. Generally these systems did not suffer any damage to the roof deck itself.

On the other hand, the insulation system on larger buildings was a composite polystyrene and lightweight concrete on either a metal or concrete roof deck. These systems were a greater challenge to repair because the insulation system sporadically broke up as the membrane separated. The resultant debris then damaged metal roof decks and rooftop air conditioning and ventilation units.

The completion schedule controlled the repair of school roofs. Officials of the Dade County School District wanted the least damaged schools to be opened on Sept. 14. Schools with more damage would be opened on Sept. 28. These deadlines were very important to the entire disaster recovery operation. Getting children back in school would be the first step in normalizing life for the local community.

However, the buildings would not be as pretty as they were before the storm. The majority of carpeting as well as all the suspended ceiling systems would be missing. At least 80 percent of the air conditioning units would not work because the exterior units were destroyed by the high winds and flying debris. But, the buildings would have utilities and lighting, and would be safe for the children to at-

Rafters are laid out on the Robert L. Morgan Vocational Technical Institute.

LT Keller was the assistant officer in charge/operations officer for Naval Mobile Construction Battalion One's 188-man detail to South Florida. He is an engineer in training in South Carolina.

tend classes.

The time constraints forced temporary repairs. The general criterion was to provide one-year maintainable roofs that would keep the building dry until the school board could have them replaced. Seabee units were tasked with repairing decks and applying cold rolled systems where appropriate. The Army Corps of Engineers would follow behind with a contractor where a built-up system was necessary. The COE support was necessary because the Seabees did not have hot mop equipment with them.

An example of the dedication to meet the school opening deadline was demonstrated at the A.L. Lewis Elementary School—a wooden structure with a sloped deck. Approximately 90 percent of the built-up roof was blown off by the storm. Hectic conditions in the area prevented contractors from permanently repairing this roof. On Sunday, Sept. 13, the Seabees were called in to take over the job. The roof was repaired by nailing a 30-pound base felt to the deck and nailing over it with a 90-pound felt. Mastic was applied to all lapped seams in the 90-pound felt, and all butt joints were covered with mastic and an additional strip of 90-pound felt. The cold rolled system allowed the 22,000-square-foot roof to be covered in 12 hours and the school to open on time.

A perlite insulation system after the membrane was blown off at South Miami Heights Elementary School during Hurricane Andrew.

Composite insulation systems

Repairing the composite polystyrene/lightweight concrete insulation systems was the greatest challenge. With the thickness of the insulation systems being either six or 24 inches, clearing debris and directly installing a temporary membrane was not possible. Drainage was also a concern because some roof drains were damaged, and different slopes were built into the roof deck and insulation systems. The answer to this problem was 2-inch x 4-inch framing lumber and plywood. The plywood patches that were developed became the mainstay of the NCF's roof repair efforts.

The Robert L. Morgan Vocational Technical Institute used the composite insulation system. The insulation was 24 inches thick. The 170-foot x 120-foot roof was sloped from the center to the sides along the major axis of the building. Roof drains were located at the centerline, along the parapet walls, and in between. This roof was damaged only along one side. Approximately 40 percent of the membrane was torn off, and 25 percent of the insulation was destroyed. The area missing insulation was 32 feet wide and ran along the entire

The damaged roof deck and composite insulation system at Perrine Elementary School.

length of the building's major axis next to the parapet. All the roof drains along the parapet were unusable.

The solution to this problem was to build a sloped wooden deck on top of the existing concrete deck, from the parapet to the next row of drains that were not damaged. The slope was obtained by constructing rafters from the top of the three-foot parapet to the undamaged area of insulation. The rafters were braced every four feet and were placed every two and a half feet along the parapet. The braces were fastened to the existing concrete deck to make certain that the system would not be blown off by the wind. Three-quarter-inch plywood was used to add ballast to the system. It took 20 men eight days to complete this system. The task was made even more difficult because, due to the lack of a crane, all materials had to be hand-carried to the roof.

This school had a large medical department that required a great deal of cooling. Fortunately, the building's air conditioning system was not destroyed by the storm. To assist the efficiency of the a/c system, almost half of the damaged insulation was left in place to help retain as much insulation value as possible. This action was discussed with school board and COE engineers to make certain that the static load capacity of the roof was not exceeded.

The other buildings with lightweight concrete were much easier to work with because the insulation was only six inches thick. The insulation thickness was uniform with the slope built into the deck.

All of these roofs also had metal roof decks on steel joists. By using a blocked 2-inch x 4-inch stringer and 3/4-inch plywood, the temporary deck was flush with the existing insulation. The stringers were run perpendicular to the joists every two feet and were held down by a strap that was screwed into the steel joist.

This design worked very well on the metal roof deck, especially where the deck itself had been damaged. This work became extremely tedious, however, because self-drilling screws were not readily available and a pilot hole had to be drilled for each screw. A three-ply, built up membrane was then installed by a COE contractor.

The plywood patch system proved to be extremely versatile. Seabees are used to working with 2-inch x 4-inch lumber and plywood, and using materials that the Seabee builders are comfortable with was a key to the success. The plywood patch system was installed at five different schools, including one school that had a total of about 10,000 square feet of damage in several locations.

Damage to the composite polystyrene/lightweight concrete insulation at the Robert L. Morgan Vocational Technical Institute.

Good communication was a must

Good communication with the school board and the COE was essential throughout the operation. The school board was the customer. It was the Seabees' job to make certain the school board got what it wanted. A breakdown in communications could have delayed the opening of the schools.

The COE was a great help in repairing the schools along with the NCF. Many times Seabees and COE contractors were working on the same roof. This potentially chaotic situation was smoothed over by the professional relationship between the COE contract managers and NCF personnel.

Contingency repairs, such as these, do have inherent problems. One such problem will be the future delamination of the plywood decking. Pressure-treated wood was almost impossible to procure in the area throughout the operation. Also, the conditions in which the systems were installed tend to trap moisture in the systems. This will cause maintenance with the roofs to be required more than usual, but the repairs should be easy.

The work performed by the NCF on the school roofs played a major role in meeting the school opening dates. Several reasons stand out as to why this facet of work was successful. Fostering a professional relationship with the school board and working closely with the COE helped the work go smoothly. Working with familiar materials to make the plywood patches also helped avoid problems. ❑

Seabees clearing some of the many tons of debris from a school yard.

AMPHIBs: They Made a Difference

By LCDR Robert D. Rotz, CEC, USN

As I approached the quarterdeck of USS *Ponce* (LPD 15) and requested permission from the officer of the deck to come aboard, my thoughts flashed back to my last cruise on this ship. I had been excited—yet apprehensive—for what laid ahead as I began my midshipman summer cruise. This time, I experienced those same emotions as I led Naval Beach Group Two Detachment Golf into Hurricane Andrew relief operations.

Naval Beach Group Two, homeported in Little Creek, Va., is comprised of Amphibious Construction Battalion Two, Assault Craft Units Two and Four, and Beachmaster Unit Two. We routinely work together in support of amphibious ready groups (ARGs), maritime preposition force (MPF), assault follow on, and logistics over the shore operations (LOTS). For this mission, we were headed for Homestead, Fla., as part of Task Force 28 to do something totally unfamiliar.

Within 24 hours of receiving orders to deploy, 144 men and women, 54 pieces of civil engineer support equipment (CESE), 21 containers of supplies and materials, two

Field expedient repair techniques will permit reuse of much of the damaged fences and result in the Dade County public school system saving many thousands of dollars in installation costs.

LCDR Robert D. Rotz, CEC, USN, is the executive officer of Amphibious Construction Battalion Two, homeported in Little Creek, Va.

LARCs (lighterage amphibious resupply cargo), two LCM-6 (landing craft mechanized-6) boats and an LCU (landing craft utility) were loaded onto USS *Ponce* and underway for the two-day transit to the Port of Miami. Offload was completed at the pier. By 8 a.m., Sept. 1, 1992, the convoy was on its way to the Redlands area of Homestead, where our camp would be established.

Graffiti painted on the damaged and destroyed buildings, such as "Life begins at 165 (mph)," "Gone with the wind," and "Looters will be shot," were signs of what to expect as we neared our destination. Our support was desperately needed and wanted by the community. Our camp—Camp Support—was erected on the grounds of the First Baptist Church of the Redlands at the invitation of its pastor.

Growing pains

Camp Support quickly experienced growing pains, expanding to about 250 men and women and 100 pieces of CESE, as it was joined by Construction Battalion Unit 412 from Charleston, S.C., and additional members of Amphibious Construction Battalion Two, Beachmaster Unit Two and Assault Craft Unit Two from Naval Beach Group Two Detachment Alpha.

These men and women and their equipment were integrated into the existing organization rather than maintained as three separate entities. Support from one operations center, one transportation yard and one galley was the most effective use of personnel and equipment. Upon its arrival to the Homestead area, the 22nd Naval Construction Regiment (NCR) assumed operational control of our Seabees and sailors.

Personnel were organized into civic action teams (CATs) and equipment was dispatched. Beachmasters and assault craft unit personnel and equipment were not used in their traditional beach assault roles. Instead, they applied the discipline required to assault a beach toward conquering the mountains of debris.

A typical school yard work site.

Relief efforts provided valuable on-the-job training opportunities.

Our primary mission was to assist Dade County in reopening 13 schools by Sept. 14. We and the other Seabees under the 22nd NCR were assigned those schools hardest hit by the hurricane and requiring Seabee skills to reopen. Fleet sailors from USS *Ponce*, USS *Hunley* (AS 31), USS *Sylvania* (AFS 2), USS *Opportune* (ARS 41) and USS *Ashland* (LSD 46) sent working parties to work inside many of the schools.

The scope of our work included clearing extensive debris and rubble around the school grounds, hauling 3,920 cubic yards of debris to dumping sites, repair or removal of 4,225 linear feet of fencing, minor building repairs, interior cleaning, furniture assembly and distribution, and conducting utility checks before restoration of power.

Secondary missions included support to other military units, such as the Army 82nd Airborne (which was involved with food distribution centers), support to Metro-Dade Police Training Bureau, Dade County Boys Home, a Florida Power and Light Company work camp and support projects for the community next to Camp Support. Additionally, LCU 1658 and crew remained with USS *Ponce* and conducted diving and salvage operations in support of the restoration of maritime aids to navigation in the Miami area. LCU 1658 and crew also ferried equipment and materials between Navy ships moored in the Port of Miami.

Integration was a key to success

The integration of naval forces was key to the success of the relief effort. Combining the beach group detachment and CBU forces worked extremely well. CATs worked side-by-side to accomplish each tasking. Personnel and equipment brought by each for the relief effort were

complementary—where the beach group detachment was short on building trades, the CBU could assist. Additionally, the beach group detachment had sufficient CESE and manpower to augment CBU. Although self-sufficient, the CBU obtained additional camp support from the beach group detachment.

Air detachments from Naval Mobile Construction Battalion One, located at the larger Seabee camp about 20 minutes south, were able to supplement where tasking exceeded the capability of the people at Camp Support. They also provided assistance when additional equipment, materials or repair parts were required.

Sailors from the ships worked on the interior of the school while Camp Support personnel worked on the exterior. Having all Seabee units report to 22 NCR lessened command and control problems. Working closely with our "customers," the school maintenance coordinators ensured that our efforts complemented those of their maintenance staffs and contractors for total project success.

Relief efforts were extremely successful. Units within the amphibious forces responded overnight and worked as a team to accomplish an unfamiliar tasking. An extensive amount of training, both in and out of rate, was conducted. ACB Two worked well with mobile construction battalion air detachments and construction battalion units. And, most importantly, the schools were open on time.

The ultimate reward for the men and women involved with this relief effort was knowing that their efforts were important and seeing the expressions of appreciation on the faces of the students and staff during plaque presentations on opening day at the schools. The Seabees' efforts had made a difference. ❑

A 12-foot storm surge destroyed the home that had stood here in Current Settlement on the Bahamian island of Eleuthera.

Seabees Help Communities in the Bahamas Recover from Andrew

By LT Stephen T. Rookus, CEC, USN

Not all disaster relief efforts for Hurricane Andrew were in Florida. A detachment of 25 Seabees from Amphibious Construction Battalion Two played an important role in helping the residents of the devastated communities on the Bahamian island of Eleuthera recovery from Hurricane Andrew.

Chief Warrant Officer Two Benjamin Powell, the officer in charge of the det, took the det, trucks and enough support equipment to be self-sufficient, aboard USS *Ashland* (LSD 46) on Sept. 6, 1992. They landed Sept. 7 in Gregory Town, Eleuthera, where they became part of Commander in Chief, Atlantic Fleet's Joint Task Force Eleuthera. Once off-loaded on the beach, the det was met by the

UT2 Brian P. Woodard and friend. Many of the Seabees made friends with the residents of Current Settlement.

LT Stephen T. Rookus, CEC, USN, was officer in charge of Commander Naval Beach Group Two's detachment to the Bahamas. He is permanently assigned as Alfa Company commander at Amphibious Construction Battalion Two in Little Creek, Va.

island residents, who showed them the damage to their homes, schools and other facilities. The conditions were deplorable. Many of the homes were little more than shacks, and the ones still standing were missing roofs and windows. Sewage had overflowed from septic tanks during the flooding and had contaminated the open wells from which people got their fresh water. No electricity was on this part of the island.

With the assistance of the Royal Bahamian Defense Force (RBDF) and the Jamaican Defense Force (JDF), a bivouac site for the camp—later to become known as Lower Bogue, Eleuthera—was identified.

Work started that first day in Current Settlement, the town that had been hit hardest by the 12-foot storm surge that struck the island. We contacted Tony Butler, the island government representative for the relief effort. He was a contractor hired by the government to oversee the public works on the island. During the ensuing three weeks, he proved invaluable in helping this small det do the most good for the most people.

The Seabees worked side-by-side with the community residents, the RBDF and the JDF to provide repairs to devastated communities. It was remarkable that with the lack of material support so much could be accomplished. The young Seabees worked above their rates to take charge of crews and projects. The residents could not believe the speed with which Seabees knocked out projects and how innovative the Seabees were.

The young Seabees worked above their rates to take charge of crews and projects. The residents could not believe the speed with which Seabees knocked out projects and how innovative the Seabees were.

Eight days into the operation, the U.S. Ambassador to the Bahamas visited Eleuthera and the Seabee project sites. He was impressed, and it soon became apparent that a strong possibility existed the det would be extended past its original 10-day schedule. The night before the det's departure, the decision was made to extend the det's stay on the island. New projects were immediately identified, and the Seabees continued their hard work in force.

By the time the Seabees were done, 10 roofs were rebuilt or repaired. More than 500,000 gallons of sewage-contaminated water were pumped from the wells and streets of Current Settlement. Mechanics repaired 67 vehicles, 27 generators and other machinery throughout the community.

Plumbing and electrical repairs were made for schools and homes. Roads and yards were cleared of debris. A tent city was built for Haitian refugees in Eleuthera where food, water, latrines and medical care were provided.

Island, national government officials and citizens gave the operation high praise. "We don't know what we would have done without you," declared Tony Butler, the government representative.

The cleanup will take months or maybe years for the people on Eleuthera, but thanks to a small detachment of Seabees from Little Creek, Va., life is one giant step closer toward normalcy. ❑

Current Settlement—the Bahamian town hit hardest by Hurricane Andrew—benefited from Seabee relief efforts.

The new parking structure at the Portsmouth Naval Hospital.

Acquisition Can Be Fun!

By CAPT W. Wayne Tomiak, CEC, USN

Constructing a $330 million naval hospital complex at Portsmouth, Va., while simultaneously keeping the Navy's busiest hospital in operation was a challenge our officer in charge of construction team welcomed. However, we soon ran into some unexpected complications, such as when outpatient demand at the existing hospital doubled from 40,000 to 80,000 patients a month. This demand happened just as we began replacing all underground utilities, relocating roadways and building numerous structures on a heavily developed site.

Keeping the existing hospital in operation during construction was further compounded by historical and environmental regulatory requirements placed on the construction.

The 104-acre site, bordered by estuaries of the Chesapeake Bay, contains a Civil War-era cemetery and the first U.S. military hospital, dating back to 1827. Both are listed on the National Historic Register. The site also includes Hospital Point, the location of Fort Nelson, built in 1776. The compound is next to downtown Portsmouth with historic neighborhoods (Old Town and Parkview) adjoining the base. The Old Town and Parkview neighborhoods have limited building

---

CAPT W. Wayne Tomiak, CEC, USN, is the officer in charge of construction at OICC Naval Hospital Portsmouth, Va.

setbacks, and the civic associations were concerned about potentially disruptive construction activities. The hospital site also contained some vintage underground storage tanks.

The OICC's mandate was to start construction of a one million square foot, state-of-the-art teaching hospital in FY 91. After the April 23, 1990, execution of a memorandum of understanding by the Naval Facilities Engineering Command, Bureau of Medicine and Surgery, and the Defense Medical Facilities Office, the OICC team mobilized. The construction contract was awarded to Lott Constructors of McLean, Va., on May 22, 1991.

Because of the mandate to start in FY 91, a number of decisions were made early. Some decisions were good, some not so good. The more important "not so good" decisions included proceeding with the design of the hospital before completing the master plan, and building the hospital first, then a parking structure.

Had those early decisions not been changed, we would have had another example of "We never have enough time to do it right but we always have enough time to do it over." Fortunately, the value engineers came to our rescue by challenging the wisdom of demolishing $10 million of relatively new facilities to make room for the new garage. By simply reorienting the garage, those facilities could remain standing. This value engineering challenge bow-waved construction of the hospital into FY 92 and allowed us to rush a draft master plan to completion. It also permitted us to re-phase the entire project and build the parking structure before starting the new hospital.

Working with the community

One early decision that worked well involved an environmental assessment and a "Finding of No Significant Impact" (FONSI). The FONSI required consensus from interest

The Clinical Investigation Facility at the Portsmouth Naval Hospital.

groups before it was published. This meant discussing our proposed project phases and our construction execution plans in detail with every local civic organization and governmental body we could find and *listening carefully to their concerns*. We then recrafted our plans to take into account those concerns. The approval of a FONSI saved at least one year in complying with the environmental process. Working with the community was the key to success!

Initially this involved emotional sessions with some of our neighbors and those with historic preservation interests. After weathering a few storms, we discovered that the "locals" had more than just complaints—they had good suggestions that not only served their needs but also strengthened our execution plan. The most notable example concerned the enormous quantity of concrete required throughout the project.

Our plan called for trucking concrete in transit mixers from local batch plants through Parkview into a back gate. It was important to segregate construction traffic from the main entrance of the hospital. However, at public meetings we learned that our neighbors had houses set back as little as 15 feet from roadways. Additionally, the subgrade conditions were conducive to transmitting damaging vibration loads to the houses. The potential of 85 trucks a day passing through the neighborhood was obviously an obstacle to developing good community relations.

We were reluctant to agree with the observations of one of our neighbors, a World War II-era Seabee, that we should consider barging in aggregate and batching our concrete on site. However, after review, his recommendation ultimately became the cornerstone of what is now a solid relationship built on understanding and trust between the Navy and its neighbors in Portsmouth. We dredged a channel, had our contractor erect a batch plant on site and barged in aggregates. Not only did we please our neighbors, but we had better project quality and schedule control.

Our community relationship was further strengthened when, after design and construction were well underway, the city of Portsmouth published local requirements for compliance with the Chesapeake Bay Preservation Act. We choose not to consider ourselves exempt as a federal agency and instead decided we would be an example of how to do it right. We worked with the city to incorporate their requirements into our plan.

Working with the community was the key to success!

Finally, we negotiated a memorandum of understanding between the Department of Defense, the President's Council on Historic Preservation and the State Historic Preservation Office on what procedures we would follow to protect national historic and archaeological resources on our site.

Developing an acquisition plan

Having established common objectives with our neighbors and environmental and historic preservation interests, we turned our attention to developing an acquisition plan. The plan would have to motivate construction contractors to meet the common objectives while executing an enormous amount of work and minimizing disruption of services to an exponentially increasing patient population.

That acquisition plan used three important tools to achieve our objectives:

- Source selection
- Award fee
- Partnering

Source selection was chosen over a sealed bid approach because we wanted to evaluate proposed methods of construction that were targeted at maintaining patient services, good community relations and historic/environmental compliances.The award fee criteria were structured toward those objectives, as well as the more traditional construction goals of quality, timely completion and accident-free work. Partnering became an effective vehicle for identifying plans of action for overcoming barriers to success and better processes for achieving our goals and objectives.

In retrospect, source selection, award fee and partnering seem to be natural components of our acquisition plan. Each tool has better focused the construction contractor/OICC/architect-engineer/hospital team on common objectives. There is a strong sense of "We're in this together!" The tools make us communicate on a daily basis. As a result, we're all having a great time! Its fun obtaining high quality work, with very few accidents, ahead of what seemed like an impossible schedule, while getting rave reviews from the community and the hospital staff.

Of course it didn't hurt to have a lean and mean team of 22 civilian employees hand picked from the best Officer in Charge of Construction Travis Air Force Base and the Atlantic Division, Naval Facilities Engineering Command, had to offer. We were also fortunate to have a resident officer in charge and three assistant resident officers in charge who were the cream of the Civil Engineer Corps crop. And finally, we got immediate assistance from every major Atlantic Division department whenever we needed it. How could we miss?

Yes indeed, acquisition can be fun. ❑

SEACON Supports JLOTS Operations in Honduras

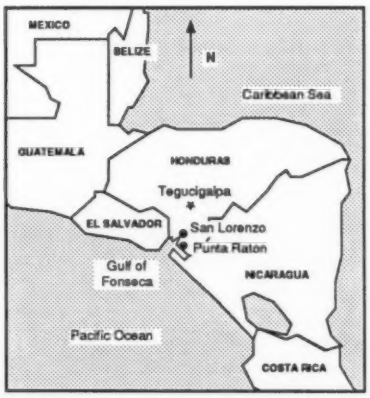
By LT David M. Boone, CEC, USN, P.E.

The Ocean Engineering and Construction Project Office (FPO-1) of the Chesapeake Division, Naval Facilities Engineering Command, provided project management and engineering services for two projects in the Gulf of Fonseca, Honduras. The projects were in support of JLOTS (joint logistics over the shore) operations conducted in Honduras during a joint exercise called Ahuas Tara in 1991.

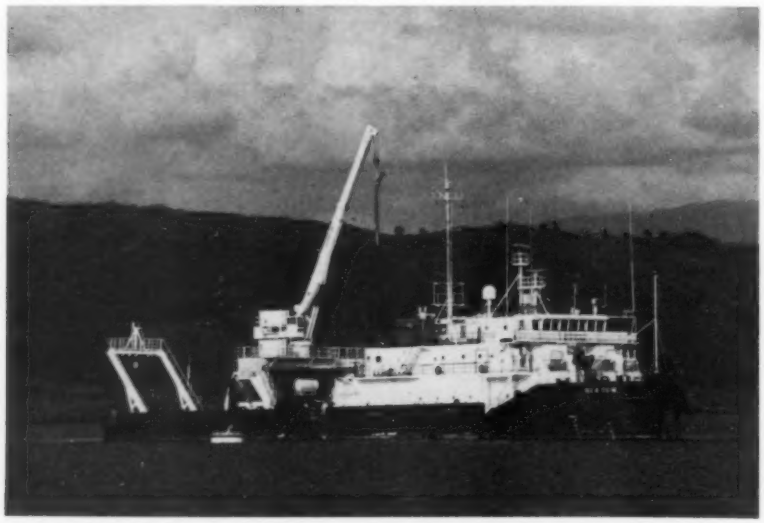
The first project was the installation of a two point mooring at Punta Raton and the second project was to perform maintenance operations at the existing petroleum off loading (POL) terminal in San Lorenzo.

JLOTS concept

LOTS is the discharge or unloading of cargo from ocean-going ships without benefit of fixed port facilities. In wartime, LOTS operations will usually follow assault echelons. In peacetime, LOTS operations can be used during civilian relief efforts. LOTS operations may be conducted over unimproved shorelines or



The Gulf of Fonseca. A two point mooring was installed at Punta Raton, and maintenance operations were performed at the petroleum off loading terminal in San Lorenzo.



The *SEACON* and her crew change out the submarine hose string.

LT David M. Boone, CEC, USN, was an ocean projects officer with the Chesapeake Division, Naval Facilities Engineering Command in Washington, D.C. He currently is assigned to the public works office at the U.S. Naval Air Facility in Atsugi, Japan. Credit for the successful completion of this project should also be attributed to CHESDIV project engineers John R. Pittman, Patricia Rozo, Lieutenant Greg Rismiller, CEC, USN, and Alex Viana and the diving supervisor, Construction Electrician Chief (Diver) Steve Mientkiewicz (UCT–1).

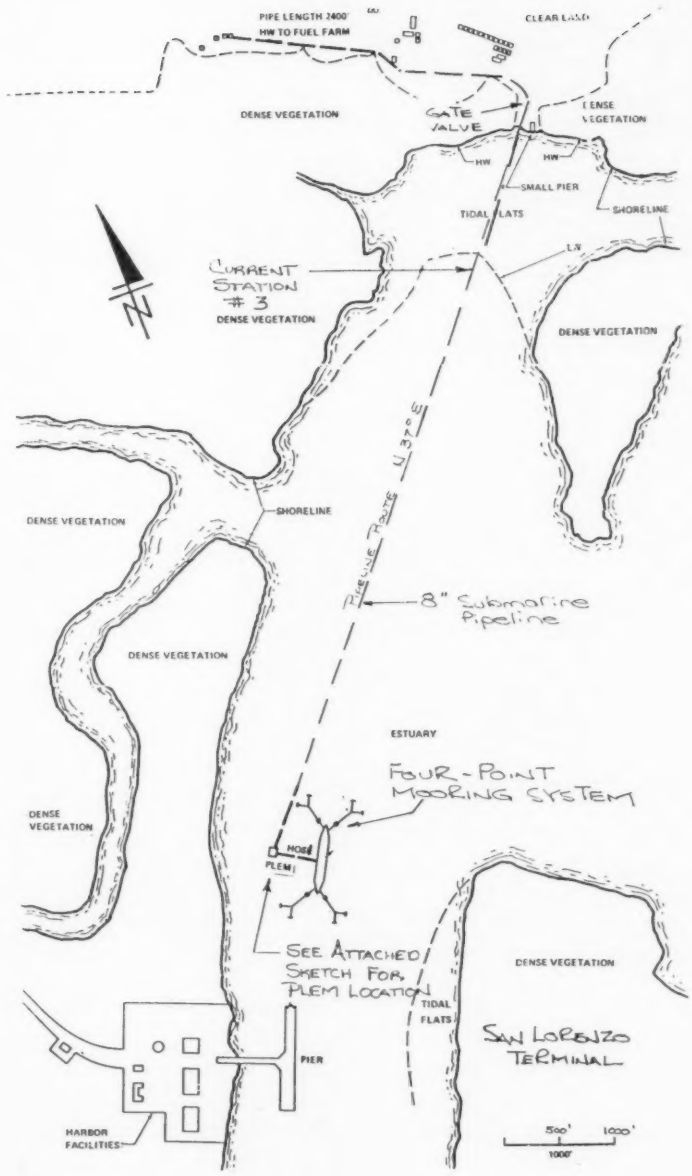
through shallow-draft ports not accessible to deep-draft shipping. LOTS operations can be carried out by either the Army or the Navy, but the operations are joint in nature, hence the term JLOTS.

In Ahuas Tara, the Navy was responsible for facilities to the high water line. Beyond that point, the Army had primary responsibility for facility support. The project at Punta Raton required a two point mooring to support the off-loading of civilian and military cargo vessels. The mooring system was designed to accommodate a single large cargo vessel up to 625 feet LOA (length over all) in a bow/stern mooring or two smaller cargo vessels up to 325 feet LOA in modified single point mooring configurations. A container discharge ramp area and storage site for the offloaded cargo was to be built at the JLOTS facility by the Army Corps of Engineers.

The POL terminal in San Lorenzo has a four-point mooring system that accommodates five fuel tankers up to 25,000 dead weight tons in winds up to 45 knots. The fuel from the tanker is offloaded into an 8-inch, 7,700 foot-long submarine pipeline that terminates with an 8-inch gate valve at the high water mark. In Ahuas Tara, the fuel was offloaded and stored in large tactical bladders by an Army or Marine Corps engineering support battalion. The fuel then could be distributed to a distant airfield with the inland petroleum distribution system installed by the Army Corps of Engineers.

Deployment to Honduras

On Oct. 2, 1991, an advance team of military and civilian personnel from CHESDIV departed for Honduras. Along the way the team was joined by support elements from Underwater



A plan view of the San Lorenzo petroleum off loading (POL) terminal.

A propellant embedment anchor (PEA) is lifted on board the *SEACON*.

Construction Team One, the Seventh Dive Det, and the 463 Military Police Company, Soto Cano, Honduras. The advance team completed multiple activities in preparation for the arrival of CHESDIV's Ocean Construction Platform (*SEACON*) on Oct. 7.

Upon arrival, a survey crew was sent to Punta Raton to establish temporary benchmarks and a baseline from which to triangulate the offshore positions of the moorings and anchors to be installed. Using theodolites, an electronic distance measuring system and small boats, marker buoys were placed at the proposed anchor positions.

Meanwhile, preliminary operations were being conducted at the POL facility in San Lorenzo. Divers inspected and recorded the position of the mooring system. In preparation for the submarine hose section replacement, the dive team inspected the flexible submarine hose string from the end of the pipeline to the hose pick-up buoy. Marker buoys were placed along the hose string at each hose flange to indicate the position of the hose string on the sea floor. Float bags were also placed at every other flange to bring the hose string to the surface for replacement.

On the morning of Oct. 7, *SEACON*, with her crew of CHESDIV and civilian contractor personnel arrived in the Bay of Fonseca from Port Hueneme, Calif., where the mobilization had taken place. *SEACON's* initial task was to install the mooring buoys in Punta Raton. Due to the conditions at the mooring site, propellant embedment anchors (PEAs) were selected for the mooring system. A PEA is a plate anchor that is fired 20 to 30 feet below the mudline by the force of detonated propellant. The PEA is deployed from a crane attached to a reaction vessel (the gun) and lowered to the sea floor. At the bottom, the PEA is fired, and the reaction vessel is recovered.

The Punta Raton mooring site has two mooring buoy systems, each with a holding capacity of 180 kips. Each mooring system consists of a steel drum buoy anchored by two PEAs with riser chains attached at an equalizer. In positioning *SEACON* for the PEA firing, she was maneuvered toward the marker buoy with her bow into the prevailing current.

The PEAs were installed within ±10 ft of the previously installed marker buoys. Once a PEA was installed, a vertical pull test of 100 kips was conducted to ensure proper installation. Following the installation of two PEAs, the riser chain, equalizer and mooring buoy were assembled on *SEACON's* deck and placed over

the side. The final buoy position was then surveyed and recorded.

On Oct. 10, *SEACON* made the eight mile transit up the bay to San Lorenzo to conduct the maintenance operations on the POL facility. The first maintenance activity was the change out of the existing buoys. Although the riser chain was in excellent condition, the steel drum buoys had experienced considerable corrosion. The *SEACON* moved into position to replace each of the buoys at the four point mooring. During the replacement of each buoy, the buoy riser chain system consisting of the chain, equalizer and anchor cables was recovered on *SEACON's* deck and inspected. Chain wear measurements revealed very little chain wear or corrosion. All double link measurements on the mooring system components exceeded 90 percent of the original diameter.

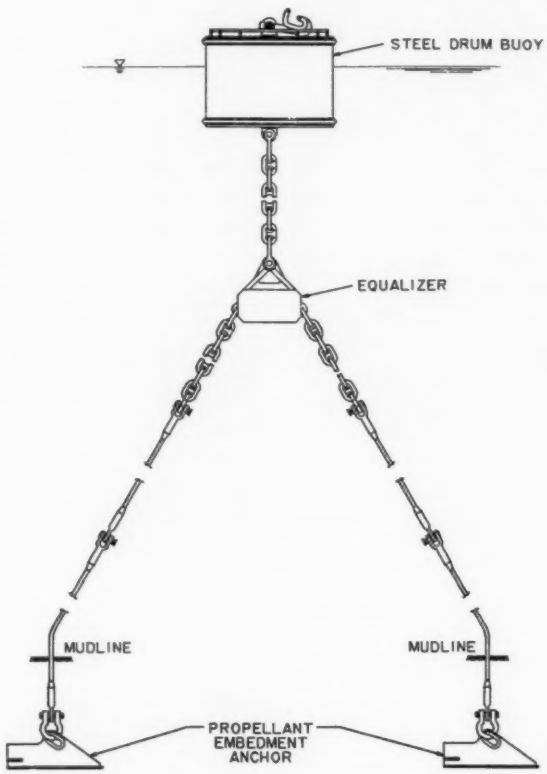
The *SEACON* then began maintenance operations on the submarine pipeline. The primary activity was to recover and replace the last five sections of the submarine hose string. This part of the hose string is recovered and lowered during each fuel offload operation and is therefore most susceptible to wear. Existing fuel in the pipeline was displaced during the change-out operations and stored in fuel bladders at the shore crossing and put back into the pipeline after the new sections were installed.

Shrimp breeding grounds were nearby, so plans were developed to contend with the risk of oil pollution in case of an accident. Oil booms and skimmers were strategically placed with reactionary teams on stand-by to respond to an accident. Absorbent pads were staged on board *SEACON* and at the fuel storage station to handle minor spills. After installation of the new sections of submarine hose, the pipeline and hose system were hydrostatically pressure tested using SEACON's water pumps.

On Oct. 15, the last objective of this deployment was accomplished—the re-enlistment of Construction Mechanic Second Class (Diver) Leonard (Mac) McGuire in Project Honduras battledress uniform of the day!

Site Specific Constraints

Many on-site constraints were unique to this project. Although the Bay of Fonseca is a large body of protected water where wind and wave conditions were relatively benign, there were significant tidal currents. With a semi-diurnal mean tidal range of nine feet, the predominant current is tidal driven. The typical tidal current is approximately 2.5 knots but currents as high as 4.0 knots have been encountered at San Lorenzo during the rainy season. This limited diving operations to brief periods of slack water occurring at a shift in tides. These periods varied from 15 to 90 minutes and usually occurred twice a day. This constraint forced work activities to revolve around available



Detail of a mooring system consisting of a buoy, equalizer and anchor.

diving windows. The tides also played havoc with the marker buoy placement, which required frequent repositioning because the 75 pound clump weights could not overcome the current drag.

The sites at Punta Raton and San Lorenzo are in confined areas surrounded by shorelines or shallow shoals. Significant changing tidal currents in a restricted area added additional risks in performing offshore operations.

Security requirements imposed significant considerations in the planning and scheduling. Military personnel were required to wear civilian clothing. Local transportation was provided with unmarked civilian vehicles with a minimum of two armed guards in each vehicle. Military police were provided as the primary security force. These MPs were also to provide communications for site personnel using either portable radio communications-77 or satellite communications gear.

Personnel not berthed on the *SEACON* were required to reside at a "safe" house, departing no earlier than 6 a.m. and returning by 6 p.m. With traveling times to some sites of nearly 90 minutes, the on-site work day was limited. These constraints required additional managerial factors to be considered in the planning and execution of the project.

CM2 (DV) Leonard (Mac) McGuire is re-enlisted by LT Dave Boone on board the *SEACON*.

Successful execution factors

Several factors lead to the successful execution of this project. The preparations required to execute offshore operations in a remote region of the world were critical. As part of the normal procedures at FPO-1, a project execution plan (PEP) is developed for each project. For this project, the PEP identified responsibilities of the different organizations involved, logistics procedures for material and equipment, installation and maintenance procedures, *SEACON* deck configurations and many other issues. The PEP was prepared as a team effort which used the combined input from all personnel involved in the project, from the logistic support personnel to the field operators. Because these people were intimately involved in the planning evolutions, they were committed to the procedures identified in the PEP.

The other major factor contributing to the success of the project was the vessel and crew of the *SEACON*. In addition to its capability to berth up to 50 personnel, and the large deck space and crane capability to conduct operations, *SEACON's* station keeping capability was essential. Powered by three Voith-Schneider cycloidal-type propellers, *SEACON* was able to hold position in significant currents without employing a mooring configuration for stability. This factor alone shortened the project duration considerably. The large deck space along with the crane and winch capabilities provide the ability to conduct multiple operations concurrently on a single deployment. The large berthing capability is always important for offshore operations but particularly critical in Honduras due to security considerations.

Another significant consideration for the project was the interaction with Honduran military officials. Unlike our military system, Honduran senior officers serve in a dual function as military commander and as political leaders of the local towns. It was essential that both the regional and base commander were kept apprised of operations to ensure harmonious relationships.

As the Department of Defense continues to downsize, joint service projects such as the Honduras project will probably become a necessity. Experience in the planning and execution of projects which require a total integration of military, civilian and contractor assets from multiple services is invaluable. The work done by this team, headed by CHESDIV FPO-1 and using the platform *SEACON* (now maintained by Fort Lauderdale, Fla., detachment of the Naval Surface Warfare Center), provided an outstanding opportunity to bring together commands and services in the execution of a large and complex joint project. This capability is better developed as a result of this experience and is available for future or underwater projects. ❑

This article is dedicated to Ocean Construction Equipment Inventory's "frogman"—the late Harry Ackerman—with fond memories. His expertise in PEAs will perpetuate with us forever...

Newport Design/Build: A Winner for the Government and the Contractor

By James M. Briggs, PE
and
LT Alan M. Wironen, CEC, USN, P.E.

This article explains how Newport design/build (NDB) works by looking at how it was successfully used in the design and construction of the Naval Air Station Brunswick, Maine, child development center.

The Newport design/build contracting process proved to be a viable alternative to the traditional design-bid-construction procurement process. Employees of the Northern Division, Naval Facilities Engineering Command, who served as design managers for this and other projects, have found that Newport design/build yields a high quality facility with significant cost savings.

The procurement time for the child development center, from inception through occupancy (29 months), was much shorter than the traditional method. Additionally, NDB required little or no increase in the level of effort from the government.

NDB uses a performance specifications-based invitation for bid (IFB) package to obtain lump-sum competitive bids for the design and construction of a product or facility. The award goes to the low bidder. After contract award, the low bidder completes the design in accordance with the performance specification requirements.

NDB contrasts with the traditional procurement process, where an architectural engineering firm is contracted to design a facility. A separate contract is awarded for construction.

NDB process is a win-win situation for both the government and contractor.

James M. Briggs is a design manager at the Northern Division, Naval Facilities Engineering Command in Lester, Pa. LT Alan M. Wironen, CEC, USN, was the construction office project manager for this project.

Government pluses

- Full scope achieved for fewer dollars
- Early obligation of construction funds and faster delivery of the facility
- Reduced design change orders and associated costs

Contractor pluses

- Freedom to use familiar methods, equipment and material
- Process causes the designer and builder to work as a team, thus minimizing design/construction conflicts

The first reaction to NDB typically is skepticism. After all, aren't we putting the proverbial fox in charge of the hen house by awarding a low bid contract for construction where the contractor's design will be heavily influenced by the bid amount? We at NORTHDIV initially shared this concern but have found NDB to be an effective acquisition process that achieves positive results.

Stages of an NDB contract

NDB execution is divided into three stages:

Stage One	Engineering field division/engineering field activity or A-E contractor preparation of contractual and technical requirements (performance specifications/ drawings)
Stage Two	EFD/EFA administration of contract Phase A design
Stage Three	Resident officer in charge of construction administration of contract Phase B construction

Good communication is essential at each stage of NDB. A kickoff meeting including representatives from the activity, engineering field division/engineering field activity, ROICC user and major claimant should be held to explain how and when each participant will be involved.

Stage One: Preparation of performance specifications/drawings

Producing the IFB package represents about 30 percent of the design effort. A design team from NORTHDIV prepared the IFB package for the Brunswick child development center.

Preparation of this IFB package required the team to:

- Develop a contract of sufficient detail to be enforceable
- Not be so specific as to eliminate the contractor's flexibility of choice inherent with NDB
- Address all the potential problems and products associated with this special use facility, but allow the contractor to use familiar methods and materials to produce a quality product on time

For the most part, these three were balanced exceptionally well, rendering construction management relatively simple.

The IFB package included:

- A schematic floor plan, partial door schedule and complete finish and color schedule
- One hundred percent complete site drawings
- Performance specifications for the major building systems
- Prescriptive specifications for site work items, building products and systems not specified by use of performance specifications

A cost estimate for the construction of the building including an estimate of the contractor's design costs was also prepared by NORTHDIV. Detailed prescriptive specifications and drawings for the contractor's proposed building systems and products in response to the performance specifications were developed later by the contractor during the Phase A portion of the contract.

Proper development of the performance specifications was the key to the success of using NDB for this project. The performance specification provides the requirements for the design and construction of the facility as well as quality assurance requirements for evaluation of design documents and construction work. The preparer of the performance specifications had to make sure customer needs were adequately provided for, while permitting the contractor flexibility of material choices. The performance specifications referenced local building codes and industry standard criteria. Performance requirements for life safety, fire protection and aesthetics were written to guarantee compatibility with Navy practices and customer needs.

Completion of the draft IFB package was followed by a single review by the activity, ROICC and user with a follow-up meeting at the activity. During the meetings, the differences between the NDB IFB package and a set of complete plans and specifications required for the traditional procurement process became apparent. All attendees expressed concern in the government's ability to enforce an IFB package, which conspicuously lacked detailed specifications and drawings. However, attendees were assured that Phase A of the contract would provide the "missing" detailed plans and prescriptive specifications.

Proper development of the performance specifications was the key to the success of using NDB for this project.

A constructability review was then conducted. At this stage the ROICC office became actively involved. The ROICC project management staff quickly realized that their thinking and standard procedures had to be adapted to this new type of contract. Fortunately, in 1985 one of the authors of this article—Lieutenant Alan M. Wironen, CEC, USN—had been assigned to the public works office at the Naval Education and Training Center in Newport, R.I., when the first NDB project, a family services center, was under construction. He was aware of NDB but had not been previously exposed to some of the details associated with the use of performance specifications.

After seeing the contractor's Phase A design, the concerns of the activity, ROICC and user were alleviated when they realized a complete set of plans and specifications would in fact be available prior to the start of Phase B construction.

Following the incorporation of review comments received from the activity, ROICC and user personnel for the Brunswick project, the IFB package was advertised for 60 days. A pre-bid meeting was held at the activity to answer

prospective bidders' questions and for the bidders to visit the site. The pre-bid meeting helps the contractors better understand contract requirements, particularly under Phase A design.

Stage Two: Phase A design

The second stage of the NDB process, Phase A design, started after contract award.

At the start of Phase A, the ROICC held the first of two preconstruction conferences with the contractor. The first preconstruction conference established a mutual understanding of the administrative requirements, safety, payments and schedules.

Administration of this phase of the contract was critical to the success of the Brunswick project. Management of the Phase A portion of the child development center contract was successfully shared by the EFD design manager and the ROICC project manager. The EFD design manager handled the daily management and provided technical direction. The ROICC project manager handled all contract modifications.

The advantages of ROICC handling of all contract modifications include:

- Assurance that paperwork is processed before construction
- Control of contract modifications is kept at the ROICC level, providing sequential continuity of all contract modifications from Phase A through the completion of Phase B
- A strong corporate knowledge base of project details is built before construction

This corporate knowledge proved to be critical in the child development center project. The EFD design manager provided both the scope and government estimate for each modification.

The contract gave the contractor 105 days after contract award to complete Phase A design. Two weeks after the contract award, a pre-design conference was held at the EFD. In addition to briefing the contractor on the Navy construction specifications and construction drawings, we also needed to make sure the *contractor fully understood the IFB design requirements.*

An informal design progress meeting was held at the contractor's office 45 days after contract award. The contractor was given general technical guidance and his progress was assessed. We were concerned the confirmed low bidder might hesitate to hire qualified designers, as required by the IFB, or get a late start on the preparation of design documents. The next day, we briefed the activity and user on the progress of the contractor's design.

Finally, the IFB required a conformance review submission—consisting of a complete set of design documents—105 days after contract award. The conformance review *was strictly a check* of the contractor's design documents, not a technical review.

The basis for the conformance review is to guarantee the design satisfies the performance specification requirements, the facility's functional requirements, and the aesthetic requirements outlined in the IFB specifications. The direction to the bidders includes a government option to close out the contract at the end of the design phase and pay the contractor 2.5 percent of the contract price, if the design does not satisfy functional or aesthetic requirements. The issue of satisfying the functional requirements was not a major concern in the delivery of the Brunswick child development center because the IFB package contained a schematic floor plan of the functional layout for the facility. The floor plan was developed and agreed to by

Lessons Learned

- Resource allocation for the administration of Phase A of the Brunswick child development center is equivalent to the effort required to manage an in-house design.
- Engineering field division/engineering field activity design managers and the resident officer in charge of construction project manager must track small details to make sure all aspects of the work are defined. (Example: the invitation for bid called for future closed circuit television conduit and brackets. However, the TV locations did *not* show how conduit would be dead-ended in the wall nor if blocking was needed.)
- The EFD/EFA design manager and ROICC project manager must keep each other current on all design/construction decisions and items discussed with the contractor.
- Prospective bidder's attendance at a prebid meeting is an effective way of making sure that the NDB contracting strategy is understood by all persons.
- Use facsimile transmissions to minimize government turnaround time in response to written contractor inquiries. (The EFD/EFA design manager signed/exchanged 30 separate pieces of correspondence during the 105 day Phase A of the child care center.)

the users of the facility as part of the preparation of the IFB package.

The contract provided a 30-day period for government review and approval of the contractor's design. If resubmissions of the design were required due to non-compliance with the technical performance requirements, the contract provided a maximum of 180 days after contract award for government approval of the contractor's design. After that time, the government had the option to close the contract with no payment made to the contractor.

The contractor's first submission for the Brunswick child development center was three weeks early. However, it was incomplete and was returned to the contractor for correction and resubmission. The contractor's second submission was approved.

Had the government approved the contractor's original submission, he could have started construction three weeks earlier.

The IFB contract requirement that the Phase A construction specifications and drawings be both *fully complete and accepted* before beginning Phase B is critical to the success of the NDB contracting strategy.

After the approval of Phase A, the contractor is paid for the design out of construction funds. Payment for the child development center was handled by having the contractor include in his schedule of prices a line item for design efforts.

Stage Three: Phase B construction

After the design for the child development center was accepted, the EFD design director sent a memorandum to the contracting officer recommending approval to begin Phase B. The Phase B portion of the construction contract was initiated by a certified letter from the EFD contracting officer to the contractor.

The second pre-construction conference was held at this point so the customer could meet the contractor and ask questions about design implementation.

As Phase B progressed, our greatest challenges came with the administration of the contract. On-site management was far less demanding. We were fortunate that the award had been made to an exceptional contractor who was concerned about quality work. The construction progressed well after a near-catastrophic form blowout during the first concrete placement. We made the contractor aware of our concerns for his forming technique and with the need for the contractor quality control (QC) manager to approve the forming before the concrete is placed.

We feel NDB lent itself easily to the IFB specified contractor QC procedures. Some of the challenges we experienced working with the QC program were:

- The QC manager was dual-hatted and did project superintendent work and material ordering in addition to his QC duties. We recommend for future projects that the project superintendent *not* be dual-hatted as the QC manager. This will allow the QC manager to devote full time to the performance of QC functions.
- The QC manager was responsible for proposing a design fix for design deficiencies. This responsibility should rest with the contractor via the project superintendent or design team.
- The submittal process got away from the QC manager since the contract required only submittals for information. Many materials were installed long before the ROICC received copies of approved submittals. We recommend approved submittals be sent to the ROICC for authorizing payments and prior to installation.

The facility is now occupied and functioning well. The contractor's receptiveness to the NDB contracting strategies and exceptional conscientiousness resulted in our receiving a top quality facility ahead of schedule. ❑

Attention all engineering students!

You can secure your future in the Civil Engineer Corps, where qualified engineering students may earn more than $1,200 per month.

If you are interested in qualifying for the Civil Engineer Corps, contact one of these officers for more information:

LCDR David J. Stewart, CEC, USN
BUPERS, PERS 4413D
Washington, DC 20370-5000
(703) 614-3635/6

LT Emmanuel T. Bautista, CEC, USN
WESTDIV, Code 09L1
900 Commodore Dr.
San Bruno, CA 94066-2402
(415) 244-2005

LT John L. D'Angelo Jr., CEC, USN
CHESDIV, Code 09PR
Washington Navy Yard
Washington, DC 20374-2121
(202) 433-7285

OR CALL
1 (800) 327-NAVY

57 Complete Basic Training at CECOS

Fifty-seven members of basic classes number 198 and 199 have graduated from the Naval School, Civil Engineer Corps Officers, Port Hueneme, Calif. Course work is comprised of eight weeks of specialized training pertinent to the Navy's needs for shore installation engineering, public works management, construction contracting and administration, and Seabee operations.

Basic Class 198

Graduation: Dec. 18, 1992

LT Timothy J. Armstrong
BSME/VMI
to EFA NW Cont. Office,
Adak, Alaska

ENS Joelle L. Buckman
BSCE/St. Martin's College
to LANTDIV Cont. Off.,
Guantanamo Bay, Cuba

ENS Jeffrey J. Carter
BSCE/Auburn Univ.
toNAVAIRWARCENACDIV,
Patuxent River, Md.

ENS Natalie A. Clark
BSME/Univ. of Florida
to NAVSTA,
Guantanamo Bay, Cuba

LT William L. Coblentz*‡
BSEE/USNA
to NORTHDIV Cont. Off.,
Newport, R.I.

ENS Karen S. Dixon
BS Chem/N.C. A&T St. Univ.
to LANTDIV Cont. Office,
Norfolk, Va.

ENS David H. Duttlinger
BE/Vanderbilt Univ.
to NAVSECGRUACT,
Adak, Alaska

ENS Stephen W. Fort
BSCE/Penn State Univ.
to NMCB Seven,
Gulfport, Miss.

LTJG Francisco O. Gabudeo
BSCE/Univ. Santo Tomas
to Philippine Navy

ENS John T. Guedes
BSCE/Univ. of Rhode Island
to LANTDIV Cont. Off.,
Norfolk, Va.

ENS Kenneth J. Hargreaves Jr.
BSEE/Univ. of Florida
to SOUTHWESTDIV Cont.
Off.,Twentynine Palms, Calif.

ENS Mark A. Hurd
BSME/Univ. of S. Carolina
to SOUTHDIV Cont. Off.,
Charleston, S.C.

ENS Michael T. Jones
BSCE/Montana State Univ.
to SOUTHDIV Cont. Off.,
Key West, Fla.

ENS Joseph A. Kahn
BS Arch./Univ. of Michigan
to CHESDIV Cont. Off.,
Patuxent River, Md.

LT Douglas M. Kurth
B. Arch/Cornell Univ.
to OICC MIDPAC,
Pearl Harbor, Hawaii

ENS Francis S. Kury
BSCE/Univ. of Pittsburgh
toNAVAIRWARCENACDIV,
Lakehurst, N.J.

ENS Dan C. Lewis
BSCE/Univ. of Idaho
to SOUTHDIV Cont. Off.,
Memphis, Tenn.

ENS Phillip S. Lodge*①
BSME/N.C. State Univ.
to LANTDIV Cont. Off.,
Louisville, Ky.

ENS Vasile G. Marincasiu
M. Engr./Univ. of Texas
to NAVHOSP,
Charleston, S.C.

ENS Jason T. Mathis
BSCE/Purdue Univ.
to NMCB Three,
Port Hueneme, Calif.

ENS Edward P. McBride
BCE/Univ. of California
to PWC Great Lakes, Ill.

ENS Alan D. Oskowski
BSME/Univ. of Washington
to NAVSTA Staten Island,
N.Y.

ENS Theresa L. Place-Thurlow
BSCE/Old Dominion Univ.
to LANTDIV Cont. Off.,
Norfolk, Va.

ENS Dale L. Seeley
BSCE/Univ. of Texas
to SOUTHWESTDIV
Cont. Off.,
Twentynine Palms, Calif.

ENS Jerry J. Shoemaker*
BSEE/Univ. of S. Carolina
to NAVOCEANPROFAC,
Ford Island, Hawaii

ENS Scott M. Skidelsky
BSCE/Univ. of Illinois
to CHESDIV Cont. Off.,
Patuxent River, Md.

ENS John D. Spencer
BSME/Cal. State Poly. Univ.
to NAS, Memphis,
Millington, Tenn.

LT James T. Stone
BSCE/Tulane Univ.
to NORTHDIV Cont. Off.,
New London, Conn.

ENS Paul J. Tobin
BSCE/Manhattan College
to OICC SOWESTPAC,
Cont. Off., Diego Garcia

LT Paul J. Tuzzolo*
BSOE/USNA
to SOUTHDIV Cont. Off.,
Jacksonville, Fla.

ENS Machelle A. Vieux
BSIE/Univ. of Oklahoma
to SOUTHWESTDIV Cont.
Off., Long Beach, Calif.

ENS Janet E. Vincent
BSOE/USNA
to SOUTHDIV Cont. Off.,
Barksdale, La.

CWO2 Tony D. Watson*
AS/Mohegan Comm. Coll.
to UCT Two,
Port Hueneme, Calif.

ENS Jimmy West
BSEE/Univ. of Lowell
to PWC Great Lakes, Ill

LT Anthony B. Williams
CE/Univ. of Washington
LANTDIV Cont. Off.,
Cherry Point, N.C.

Basic Class 199

Graduation: April 2, 1993

ENS Kevin J. Barton
BSCE/Virg. Polytech
to LANTDIV Cont. Off.,
Jacksonville, N.C.

ENS Gregor S. Bo
BSCE/Fla. Inst. Tech.
to NMCB Four,
Port Hueneme, Calif.

ENS Romeo L. Coleman
BSEE/Prairie View A&M
to SUBASE,
New London, Conn.

ENS Daniel J. Cuozzo
BSME/Penn State Univ.
to LANTDIV Cont. Off.,
Jacksonville, N.C.

ENS Stephen R. Foster
BECE/Stevens Inst. Tech.
to OICC MIDPAC
Pearl Harbor, Hawaii

ENS Andrew M. Hascall
BSME/Ill. Inst. Tech.
to LANTDIV Cont. Off.,
Little Creek, Va.

ENS Brandie S. Hayden
BSIE/Texas A&M Univ.
to SOUTHDIV Cont. Off.,
Jacksonville, Fla.

LT Amea C. Hwang
BSME/Texas Tech. Univ.
to NAVSURFWACEN
Carderock, Bethesda, Md.

ENS Kenneth J. Koziol
BSCE/Rose-Hulman Inst.
to SOUTHWESTDIV,
San Diego, Calif.

Reserve Officers

These reserve officers were part of basic class 199 during the period Jan. 18, 1993 through Feb. 4, 1993.

ENS Paul S. McComb
MSCE/Northwestern Univ.
to NMCB 40,
Port Hueneme, Calif.

LT Patrick L. McCormack
BSCE/Univ. of Maine
to NAS Adak, Alaska

ENS Jodi L. Munterfering
BSME/Univ. of S. Dakota
to MCAS, Beaufort, S.C.

ENS Benjamin J. Oksanen
BSCE/Univ. of Conn.
to NORTHDIV Cont. Off.,
New London, Conn.

ENS Heath K. Pope
BSCE/Michigan State Univ.
to PWC Guam

ENS Shaun R. Roedel
BSME/Utah State Univ.
to LANTDIV Cont. Off.,
Norfolk, Va.

LT April C. Dixon

LT Ronald P. Hill

ENS Bruce E. Jensen

ENS Mark A. Roys
BSME/Univ. of Arizona
to OICC PACNFEC Det,
Yokosuka, Japan

ENS Michael R. Saum
BSCE/Union College
to NMCB 40,
Port Hueneme, Calif.

ENS John R. Schwartzbeck
BSME/Univ. of Kansas
to SOUTHDIV Cont. Off.,
New Orleans, La.

LT Arthur C. Kittell

ENS Kenneth Nakashima

ENS Gary S. Phillips

ENS Darren L. Sweet
BSME/Univ. of S. Carolina
to LANTDIV Cont. Off.,
Jacksonville, N.C.

ENS Daniel R. Urbine
BSEE/Vanderbilt Univ.
to NMCB Five,
Port Hueneme, Calif.

ENS Thomas A. Waltz Jr.
BSCE/Univ. of Pittsburgh
to NAS Key West, Fla.

CWO2 Richard E. Reed

CWO2 Larry D. Reid

LT Mitchell L. Wilkins

LT Richard L. Whipple III
BSCE/Univ. of Virginia
to OICC MIDPAC,
Pearl Harbor, Hawaii

* With Distinction
‡ Class Commander
① First in Class

Advice of Counsel

Dealing With Environmental Regulators

Part 2: The Facility Inspection

By Ralph Lombardo, Esq.

On Oct. 6, 1992, then-President George Bush signed the Federal Facilities Compliance Act (P.L. 102-386) into law. The act clarifies that federal facilities are subject to civil and administrative fines and penalties for violations of federal, state and local laws dealing with the handling and disposal of solid and hazardous wastes.

The FFCA provides environmental regulators a new enforcement tool for use against federal facilities and a source of funds to defray enforcement costs. Since only those violations that occur after the act's effective date will be subject to the fines and penalties, we can expect an increased effort on the part of the regulatory agencies to identify and record violations by federal facilities.

The facility inspection is a primary method for uncovering environmental violations. Every major federal environmental statute provides federal, state and local regulators broad authority to inspect federal facilities. The Resource, Conservation and Recovery Act (RCRA), for example, provides:

> [F]or the purposes of developing or assisting in the development of any regulation or enforcing the provisions of this chapter, such officers, employees or representatives are authorized—
>
> (1) to enter at reasonable times any establishment or other place where hazardous wastes are or have been generated, stored, treated or disposed of, transported from;
>
> (2) to inspect and obtain samples from any person of any such wastes and samples of any containers or labeling for such wastes... (see, 42 USC 6927)

Thus, regulators can, *without notice*, request to inspect a federal facility, provided that the inspection occurs at a "reasonable time." A refusal of that request can be construed as a violation of the RCRA compliance requirements. Federal facilities can refuse an inspection only when the refusal is necessary to protect classified information and the national security of the United States. To bring an enforcement or compliance action against a Navy facility, the regulatory agency must establish an administrative record documenting its findings and determinations. The administrative record for a facility inspection is critical in the enforcement and defense of an alleged violation.

The Navy must make sure the inspection record is complete, correct and contains only relevant information. (See the Summer/Fall 1992 issue of the *Navy Civil Engineer*.) This article discusses some ways of dealing with inspections and protecting the integrity of the administrative record.

Coordination prior to first inspection

Most disputes regarding regulatory access to federal facilities result from misunderstandings and poor communication.

A typical scenario is where a state regulatory officer asks a contract security guard for access to the installation to conduct an inspection. The guard, properly performing his or her job, refuses access. The inspector leaves and a Notice of Violation (NOV) is later received by the instal-

Ralph Lombardo is the associate counsel (land use) at the Northern Division, Naval Facilities Engineering Command in Lester, Pa.

lation. An inspection occurs shortly thereafter; however, an NOV is now part of the administrative record.

Good communication between the agency and the facility can prevent this scenario. Most agencies will be receptive to an established protocol as soon as the facility comes within the agency's jurisdiction (such as when the facility begins to generate hazardous wastes or applies for a pollution discharge permit).

Document the protocol by an exchange of letters, outlining procedures for a smooth inspection. The items that may be in a protocol include:

✔ Defining a "reasonable time" for inspections (such as between 9 a.m. to 5 p.m. weekdays)

✔ Providing a voluntary notice of intent to inspect by the regulatory agency

✔ Identifying an installation point of contact to allow easy access to the installation

✔ Providing a courtesy in-brief and out-brief with the commanding officer or executive officer

✔ Making sure that the regulatory agency recognizes that agency inspectors are present on the installation as guests of the commanding officer and are expected to adhere to the rules and regulations that apply to all visitors (provided such rules will not unreasonably interfere with the inspection)

Conduct of the inspection

Inspections usually include a combination of a facility tour, a review of relevant records and documentation, and sometimes discussions with employees. There is no requirement that the inspector be allowed access to those parts of the facility that are not relevant to the inspector's regulatory duties. It is important to have the inspector identify himself or herself and state for the record the regulatory authority and purpose for the inspection. For example, if the inspection is being conducted with respect to a naval air station's sanitary sewage discharge permit, the inspector does not need (and can be refused) access to the air traffic control tower.

Accompany and mimic the inspector. If the inspector takes a photo, you should take the same photo. Make notes of all sites visited by the inspector, of all questions and answers, and any comments made by the inspector. In this manner, the facility can generate a similar inspection record and can assess whether there may be a compliance problem. Voluntary corrections of such problems go a long way in avoiding enforcement actions.

As the inspection draws to a close, ask the inspector for immediate findings. In most cases the inspector will refuse, but it is important that the record reflect the Navy's interest in any problems found and its eagerness to initiate corrective measures.

Finally, and most important, make a formal request that all findings, reports and determinations that result from the inspection be provided as soon as they are available.

Post-inspection follow-up

Remember, the goal is to guarantee the integrity of the regulator's and the Navy's administrative record. Write down all discussions, agreements and proposed actions identified during the inspection. Send the write-ups to the regulatory agency in a post-inspection follow-up letter. The letter should also establish in the record any obvious and immediate corrective measures that will be taken and those that have already been taken. Again, make a formal request for all reports and findings generated from the inspection. If the agency does not respond, send a second request and a third request, if necessary.

Most disputes regarding regulatory access to federal facilities result from misunderstandings and poor communication.

It is in the Navy's best interest to keep the ball in the regulator's court. If the inspection leads to an enforcement action (in an administrative tribunal or a court of law), it is preferable to have evidence to show that the regulator was aware of the Navy's position and failed to consider, correct or rebut that position in the administrative record. The follow-up letter can serve this purpose well.

•••

Inspections have become part of the day-to-day routine of many facilities. Manage inspections and inspection records in the same manner other facility requirements are handled. With proper planning, communication and follow-up, the facility inspection should not become an undue burden on either party. It can serve as a useful information gathering exercise for the Navy and the regulator and, in turn, help foster a comfortable regulatory atmosphere. ❑

Notice of violation and negotiations will be discussed in the upcoming issue of the Navy Civil Engineer magazine.

Total Quality Leadership Update

Electronic planning guide gives customers what they want—and more

By Kathleen Sampson

Remember when you thought we were well into the future with fax machines, much less computers?

Another futuristic habit is now making its debut through the innovative spirits of a few Chesapeake Division, Naval Facilities Engineering Command and NAVFAC headquarters employees, and a contractor. They have most assuredly cleared the way for those cumbersome, thick (and often boring) instructions to be paperless, and rather interesting too.

In 1992, Letitia Gomez, a CHESDIV planner, was assigned to administer a contract to update and improve the NAVFAC Shore Facilities Planning Manual. Notices were sent to everyone whose names were on a distribution list for the manual to solicit their comments on the improvement of what they commonly referred to as "44-Echo." Visits were made to all the engineering field divisions, and selected field activities, to conduct four group meetings on how to improve the planning manual.

Gomez said, "Users were asking for added information on a variety of subjects related to their work. We soon realized that we were going to end up with an instruction two-feet thick!" Users also wanted a book that was easy to maneuver with a lot of tabs and indexing. So, during an early meeting, someone suggested putting the information on a computer disk. "That's what got the ball rolling," she said.

The committee was made up of Captain Tal Bone, CEC, USN, Don Pledger, and Bob Myers, all of NAVFAC; and Bill Faught and Letitia Gomez, planners from CHESDIV.

Once the suggestion was researched and the question, "Could we get all that on a disk?" was answered, a decision was made to go ahead with it. Contractors, who were putting together the revised 44-Echo, then were notified. "We told them that the end product would be a computer disk instead of stacks of volumes," said Gomez.

Art by Bill Brack

Curling up with a good book won't ***ever*** be the same

Working with the more than 150 authors, mainly from the Navy and a few from the Marine Corps, a prototype was made and sent around to some of the manual's 550 users. Not having decided on a formal title for the process, Gomez said it is actually an electronic planning "guide."

"It was very well received," said Don Pledger, NAVFAC's planning coordinator. "The initial response was 'more, more!' " Those using the manual immediately saw an improvement, over one on paper, in which they could immediately call up an individual subject on a screen—and even have it printed out.

The sample also introduced graphics and color photographs that made reading easier and much more appealing to its audience. There's also an emphasis on minimizing jargon and maximizing "plain English," so readers can understand the manual.

Pledger said they've checked and are not aware of any other services within the Department of Defense that are using the system.

"It's sure to catch on," said Pledger. "The value to the Navy is more than just replacing paper. The information is timely in terms of getting out the latest on construction, real estate and utilities. And it's at our fingertips instead of having to hunt through volumes of paper for something we need." He added that when a subject has to have an update or additions, the information will be sent out on a computer service called the "bulletin board." This cuts the cost of printing and mailing, and is instantaneous.

Pledger thinks it's the most customer-focused thing that NAVFAC has. ❑

Kathleen Sampson is the public affairs officer of the Chesapeake Division, Naval Facilities Engineering Command in Washington, D.C. This article is adapted from the January/February 1993 edition of the command newspaper, The Surveyor.

LCDR Frank Aucremanne to Receive Moreell Medal

Lieutenant Commander Frank Aucremanne, CEC, USN, has been selected to receive the Moreell Medal for 1992. The award is given annually by The Society of American Military Engineers in recognition of the most outstanding contribution to military engineering.

LCDR Aucremanne was the Naval Mobile Construction Battalion One Subic Bay detail officer in charge during the Mount Pinatubo recovery efforts; officer in charge of NMCB One's efforts in support of Hurricane Andrew relief; and operations officer during Operation Restore Hope in Somalia.

During NMCB One's deployment to the Pacific, Mount Pinatubo erupted in the Philippines. As the Subic Bay detail officer in charge, LCDR Aucremanne directed the accomplishment of 6,000 mandays of recovery work with zero lost time accidents. Concurrently, his detail completed the retrograde of NMCB 74's table of allowance, which had been diverted to the Philippines to help with the recovery operations.

Back in homeport, LCDR Aucremanne was selected to be the OIC of a detail which provided relief support to the Dade County (Fla.) School District in the aftermath of Hurricane Andrew. The detail also assisted in the cleanup efforts in the cities of Homestead and Florida City.

Shortly after the start of the European deployment in November 1992, NMCB One was placed on alert for Operation Restore Hope. In theater in late December, he organized the battalion to begin construction operations in support of the Marines. Concurrently he effectively implemented defensive operations to protect the battalion and safeguard project sites.

New Master Chief of the Seabees Is Named

Master Chief Constructionman (Seabee Combat Warfare) Patrick L. Race has been selected to become the next Master Chief of the Seabees and Senior Enlisted Advisor to the Commander, Naval Facilities Engineering Command, Rear Admiral Jack E. Buffington, CEC, USN. CUCM (SCW) Race, who is currently Naval Mobile Construction Battalion Seven's command master chief, will assume his new duties in June 1993. He will relieve Master Chief Equipmentman (Seabee Combat Warfare) Herman C. Hart.

CUCM (SCW) Race enlisted in the Navy in 1969. His first assignment was with NMCB Seven, and he later served in Vietnam. Other assignments included NMCB One; Naval Support Unit, State Department; United States Embassy, Warsaw, Poland; NCTC Port Hueneme; CBLANT Det Gulfport; and CBU 413.

Gulfport Seabees Clean Up Beach for Earth Day

Naval Construction Battalion Center Gulfport, Miss., continued its community involvement by helping clean up Mississippi beaches to commemorate Earth Day, April 22.

Approximately 40 Seabees from Naval Mobile Construction Battalion 133, Naval Mobile Construction Battalion Seven and the CBC participated in the clean up. The Seabees collected 750 pounds of bottles, cans and paper from a five-mile stretch of highway from Gulfport to Long Beach, Miss.

David J. Nash Frocked to Rear Admiral

Congratulations to the Civil Engineer Corp's newest admiral—Rear Admiral David J. Nash, CEC, USN. He has been frocked to that rank.

RADM Nash, who is the commanding officer of Construction Battalion Center Port Hueneme, Calif., and commander, 31st Naval Construction Regiment, is currently on temporary assignment in Naples, Italy.

He is providing engineering support on the staff of Admiral Jeremy M. Boorda, Commander in Chief, Allied Forces, Southern Europe.

Subscribe Now!

Superintendent of Documents **Subscription** Order Form

Order Processing Code:
*** 6063**

Charge your order. It's Easy!

To fax your orders (202) 275–0019

☐ **YES,** please send me the following subscription:

___ subscriptions to **NAVY CIVIL ENGINEER (NCE)** for $5.50 per year ($6.88 foreign).

The total cost of my order is $_____. Price includes regular domestic postage and handling and is subject to change.

(Company or Personal Name) (Please type or print)

(Additional address/attention line)

(Street address)

(City, State, ZIP Code)

(Daytime phone including area code)

(Purchase Order No.)

May we make your name/address available to other mailers? YES ☐ NO ☐

Please Choose Method of Payment:

☐ Check Payable to the Superintendent of Documents

☐ GPO Deposit Account ☐☐☐☐☐☐ – ☐

☐ VISA or MasterCard Account

☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

☐☐☐☐ (Credit card expiration date)

Thank you for your order!

(Authorizing Signature) 6/91

Mail To: New Orders, Superintendent of Documents
P.O. Box 371954, Pittsburgh, PA 15250–7954

Have you considered the reserves?

For a challenging, rewarding career...

If you are a young construction professional in civilian practice or civil service, or are a graduating engineering or architecture college senior who has already selected a civilian career path, the reserve Civil Engineer Corps may have a place for you. Qualified young professionals have the chance to achieve tremendous personal and professional satisfaction through...

- Direct appointment as an ensign, Civil Engineer Corps, United States Naval Reserve
- Challenging assignments within reserve Naval Construction Force units in your geographic locale, in areas paralleling active duty in the Seabees or in facilities management
- Annual active duty training that is meaningful
- Development of leadership and technical skills that will carry over directly into your civilian profession
- A naval reserve retirement package for a little something extra in your old age

Here's what you can do...

If you are a young engineer or architect, please call or write a reserve representative listed below.

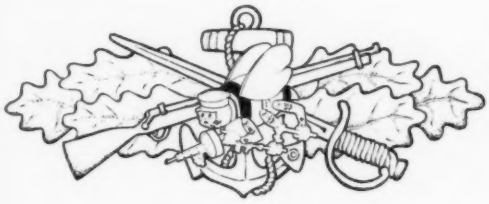
C.E. Bradshaw
RNCF Representative, Atlantic Area
Building NH47, Naval Base
Charleston, SC 29408-5192
Phone: (803) 743-2650
DSN: 563-2650

LCDR Doug Stauffer, CEC, USN
RNCF Representative, Pacific Area
Naval Training Center, Building 304
San Diego, CA 92133-1000
Phone: (619) 524-6846
DSN: 524-6846

Or contact an active duty accessions officer listed on page 24 for further information.

Seabee Combat Warfare Pin Is Awarded

EQCM Herman C. Hart receives the symbolic first Seabee Combat Warfare pin on behalf of all Seabees by Rear Admiral Jack E. Buffington, CEC, USN, Commander, NAVFAC and Chief of Civil Engineers. EQCM Hart, then-master chief of the Seabees and senior enlisted advisor to the Commander, Naval Facilities Engineering Command and Chief of Civil Engineers, was presented with the pin by RADM Buffington at the Construction Battalion Center, Gulfport, Miss., Seabee Ball on Feb. 27, 1993.



The Seabee Combat Warfare pin. The officers' pin is a gold color, and the enlisted personnel pin is a silver color.

Navy Civil Engineer, Code OODA
Naval Facilities Engineering Command
200 Stovall St.
Alexandria, VA 22332-2300

OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE, $300

FIRST-CLASS MAIL
POSTAGE & FEES PAID
U.S. NAVY
PERMIT NO. G-9